REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
2 11	–	REL ON C/N N3142	10-7-75	KBC
	A	C/N N3732 REVISED & UPDATED	2/10/76	KBC
	B	C/N N3969 REVISED & UPDATED	6/1/76	KBC
	C	C/N S36. REVISED NOTES 1, 3 & 9. DELETED NOTE 2. ADDED NOTES 2 & 10. ALL "E" TEST POINTS WERE TP. ADDED INPUT/OUTPUT TB & PC RECEPT PIN DESIGNATIONS. ADDED DRIVERS & GENERALLY REVISED CKT. IN LAMP LOGIC SECTION. TDE-1 = 4.3 SEC, WAS 2 SEC. (2 PLACES) REVISED CKT TO "AND" GATES FOR "LOCAL".	4/7/77	KBC
	D	C/N S163. REVISED NOTE 2. ADDED TABLE I PIN 7 WAS 10. PIN 63 WAS 70. LOCKED OUT CROSS COMMANDS WITH SELECTED ESF COMMANDS. CONNECTED PWTO TO FLASH MEMORY RESET. REVISED AND EXPANDED MEMORY DELAY AND SET-UP TIMES.	5-5-77	KBC
	E	C/N S 206. ADDED TDE-1 & TDC ELEMENTS. CONNECTED PSCD TO PWST WAS "DIRECT START (OPEN) OUT", CONNECTED PSCD TO PWSH WAS "DIRECT STOP (CLOSE) OUT". REVISED TABLE I	9/23/77	KBC
	F	C/N S 218. DELETED "MCR MEMORY" RESET DELETED TDE-L. ADDED (2) OR GATES TO "FLASH" RECT'S. MOVED TDO TO LOCAL "AND" OUTPUT. CHANGED AUTO MEMORY DELAY TIMES.	4/1/77	KBC
	G	C/N S242. INCORPORATE CUSTOMER COMMENT. TDO'S IN LAMP LOGIC WERE 2.0 AND NOW ARE 4.3. ALSO ADDED NEW PSOP AND PSCP TIME DELAYS (2). PSOD OUTPUT P/N 70 WAS G3, TABLE MIN 2.5 WAS 2.8 (4 PLACES)	11/24/77	KBC

TABLE I

CIRCUIT ELEMENT	OUTPUT DELAY & TIME TO LATCH (m SEC.) MIN.	TYP.	MAX.	COMMENTS
"START/STOP"	2.5	8.5	20.5	
"LAST COMMAND"	0.35	1.1	2.5	
"FLASH"	2.5	8.5	20.5	OUTPUT CHANGES WITHIN 1 μ SEC
"AUTO"	2.5	8.5	20.5	
PSOP AND PSCP	2.5	8.5	20.5	NOISE FILTERING

NOTES:
1. WHENEVER POWER IS APPLIED, J-K FLIP FLOP COMES ON IN RESET STATE (MANUAL MODE). IF DIRECT SET AND DIRECT RESET ARE BOTH LOGIC '1' LEC ASSUMES AUTO MODE.
2. 'RESET' OVERRIDES 'SET' AND MEMORIES COME ON RESET WHEN POWER IS APPLIED. DELAY AND (LATCH-UNLATCH) SET-UP TIMES ARE SHOWN IN TABLE I (ABOVE).
3. TIME BASE RUNS CONTINUOUSLY. LOGIC COMPATIBLE SQUAREWAVE INPUT, 10 HZ, 50% DUTY CYCLE (APPROX), TWO CLOCKS (1 BACK UP) PER SSCS CABINET.
4. LAMP LOGIC DESIGNED FOR:
   a. "VALVE FULLY OPEN" SWITCH CONTACTS NORMALLY OPEN BUT CLOSED WHEN VALVE IS FULLY OPEN.
   b. "VALVE FULLY CLOSED" SWITCH CONTACTS NORMALLY OPEN BUT CLOSED WHEN VALVE IS FULLY CLOSED.
5. TORQUE SWITCHES CLOSED WHEN TORQUE IS LOW. PVOT & PVCT MUST BE WIRED TO LOGIC 1 FOR NON-VALVE APPLICATIONS.
6. LOGICAL SIGNAL NAMES ARE DESIGNATED BY FOUR CHARACTER MNEUMONIC SUCH AS (CSTC, PVSP, BFR1)
   FIRST CHARACTER DESIGNATES SIGNAL SOURCE OR DESTINATION.
   C = CONTROL BUFFER M OR X = GENERAL PURPOSE
   P = PROGRAMMING PANEL.
   B = FIELD BUFFER
   FOR FURTHER EXPLANATION SEE NOTE 4 ON KDB 2316 "SSCS SINGLE CHANNEL BLOCK DIAGRAM/SCHEMATIC"
7. WHEN REMOTE ACS IS USED (25 CHANNELS MAX. PER CABINET) ACS BUFFER IS WIRE "OR"ed BY CCC. SAME LEC PIN ACCEPTS EITHER MCR OR ACS COMMAND. CONTROL PRIORITY IS ESTABLISHED BY SWITCHING OF 28 VOLT SUPPLIES TO EITHER MCR OR ACS BUFFERS BY MEANS OF 3/3 MV TRIX. LEC OUTPUTS CLSO AND CLSC DRIVE LAMP DRIVERS IN BOTH MCR AND ACS BUFFERS.
8. FLASH RATE IS 5 HZ, 50% DUTY CYCLE.
9. "E" DESIGNATES TESTPOINT ON CARD FRONT, ACCESSIBLE WHEN LOGIC CABINET FRONT DOOR IS OPENED.
10. PROGRAM PANEL TB POINTS ARE SHOWN THUS [7]. PRINTED CIRCUIT CONNECTOR PINS ARE SHOWN THUS (18). SIGNALS NOT AVAILABLE ON PROGRAM PANEL ARE SHOWN ☒.

PROJECT BELLEFONTE NP
CONTRACT 75K3-85550
DRAWING NO. KFB 2316
SHEET 1 REV G UNIT 1&2

APERTURE CARD

APPROVED
Tennessee Valley Authority
Date AUG 26 1977

QTY REQD FOR DASH NO.	ITEM NO.	NOMENCLATURE OR DESCRIPTION	DWG SIZE	PART OR IDENTIFYING NO.	SPECIFICATION	MATERIAL OR NOTE	REMARKS

LIST OF MATERIAL

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
.X ±.03 .XX ±.01 .XXX ±.005 ANGLES ±1/2°
FRACTIONS ±
ALL MACH. SURFACES √ RMS
DRILL HOLES PER ANSI B94.7
BURRS & SHARP EDGES PER ASME Y14.5M
45° CHAMFER FIRST THREAD
TOLERANCES PER ANSI Y32.5
CONF. TOL APPLY TO STOCK SIZES

MATERIAL: —
FINISH: —

SENT ASSY	USED ON
6N192	6N192
APPLICATION	

CONSOLIDATED CONTROLS CORPORATION
BETHEL, CONN. — EL SEGUNDO, CALIF.

DRAWN Eleslie 8-26-75
CHECKED K.Kaltabrant 8-29-75
ENGR. [signature] 10-7-75
RELEASED [signature] 10-7-75

FOR BELLEFONTE NUCLEAR PLANT UNIT 1&2
CONTRACT NO. 75K3-85550
TENNESSEE VALLEY AUTHORITY

LOGIC DIAGRAM
LOGIC ELEMENT CONTROLLER (LEC)

SIZE	CODE IDENT NO.	KFB 2316
F	02750	

SCALE — WT. — SHEET 1 OF 1

KFB 2316

Docket # 50-438
Control # 8202080064
Date 8202072 of Document
REGULATORY DOCKET FILE